

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
PERMITTING and COMPLIANCE DIVISION  
MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(MPDES)**

**Statement of Basis**

Permittee:	City of Conrad
Permit No.:	MT0020079
Receiving Water:	An unnamed tributary to the Dry Fork of the Marias River
Facility Information:	Conrad Wastewater Treatment Plant
Mailing Address:	411 ½ South Main Conrad, MT 59925
Contact:	Richard Anderson, Public Works Director
Telephone:	(406) 271-5821
Fee Information:	
Type:	Minor Publicly Owned Treatment Works
Number of Outfalls:	1 (for fee determination purposes)
Outfall - Type:	001 – Plant Discharge

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**I. Permit Status**

The Montana Pollutant Discharge Elimination System (MPDES) permit for the City of Conrad (City) Wastewater Treatment Plant (WWTP) was issued on March 15, 2006, became effective on May 1, 2006, and expires at midnight, April 30, 2011.

The Department received a letter from the City on October 10, 2008 (with additional information received on November 20, 2008 ) requesting one MPDES permit modification: to change the location of Outfall 001 to a point approximately 3,200 feet upstream from the currently permitted Outfall 001 location. The present lagoon treatment system will continue to discharge at the current location of Outfall 001 until it is replaced by a new mechanical WWTP estimated to be completed and operational by August 2010. The discharge line for Outfall 001 in the modified location will be constructed concurrently with the new mechanical WWTP and only effluent from the new mechanical WWTP will discharge through Outfall 001 at the modified location. Use of

the current Outfall 001, as well as lagoon cells 2 and 3, will be abandoned when the new mechanical WWTP commences discharge through Outfall 001 at the modified location.

The scope of this permit modification is limited to only relocation of Outfall 001, as required by ARM 17.30.1365(4)(b).

## **II. Facility Information**

### **Current Facilities:**

The Conrad WWTP serves the City of Conrad, with a current population of approximately 2,800 people. The WWTP is a partially aerated, secondary treatment lagoon facility with a continuous discharge design flow of 0.65 million gallons per day (mgd) and no disinfection. The original 2-celled facultative treatment system was built in 1958. In 1972, an upgrade added the aerated cell and in 1991, the current effluent overflow structure and flow metering capabilities were added. The existing plant has operational limitations, in that it can only be operated in a series configuration, and sludge accumulation in the lagoon cells has reduced treatment effectiveness and effluent quality. The current Outfall 001 is located at the northwest end of lagoon cell 3, at 48°12'25" N latitude and 111°55'30" W longitude.

### **Upgraded Facilities:**

The Conrad WWTP must meet final Outfall 001 effluent limitations that are equivalent to EPA secondary treatment standards as delineated in 40 CFR 133.102(a), 102(a)(3), 102(c), 105(b) and 105(d), effective April 30, 2011. The proposed new mechanical WWTP will be designed to meet the final Outfall 001 effluent limitations.

This permit modification is limited in scope to the following:

Change location of Outfall 001 to a point at approximately 48°12'16" N latitude and 111°55'09" W longitude. Since Conrad is allowed to only discharge through a permitted outfall [Montana Code Annotated (MCA) 75-5-605], the permittee must render the current Outfall 001 inoperable when use of Outfall 001 at the modified location is commenced.

## **III. Technology-based Effluent Limitations (TBELs)**

### **a. Applicability of Technology-based Effluent Limitations**

The permit establishes interim limitations for Outfall 001 discharges through April 29, 2011, that are based on: National Secondary Standards for 5-day biochemical oxygen demand (BOD<sub>5</sub>), percent removal of BOD<sub>5</sub>, and pH; and "equivalent-to-secondary" Alternative State Requirements for total suspended solids (TSS), and percent removal of TSS.

Final limitations, effective April 30, 2011, are based on National Secondary Standards for BOD<sub>5</sub>, TSS, percent removal of BOD<sub>5</sub> and TSS, and pH. The requested permit modification will not affect TBELs.

b. Nondegradation Allocated Loads

Nondegradation allocated load limits were determined under previous permitting actions for BOD<sub>5</sub>, TSS, total nitrogen and total phosphorus, based on the 1993 design criteria for the Conrad WWTP. The requested permit modification will not affect nondegradation allocated loads.

**IV. Water-Quality Based Effluent Limitations (WQBELs)**

The permit establishes interim limitations for discharges from Outfall 001 through April 29, 2011, on *Escherichia coli* (*E. coli*) bacteria and total residual chlorine. The interim limitations on *E. coli* bacteria are consistent with the capabilities of the existing WWTP that does not have the ability to disinfect its effluent. The permit contains a compliance schedule for bringing effluent *E. coli* bacteria levels into compliance with water quality standards effective April 30, 2011. Maximum total residual chlorine limitations have also been established to apply if chlorination is used for disinfection.

Final limitations, effective April 30, 2011, are based on the Montana State Surface Water Standards [ARM 17.30.624(2)(a)] for allowable levels of *E. coli* bacteria and total residual chlorine. Nearly instantaneous mixing is assumed in accordance with [ARM 17.30.516(3)(d)], resulting in effluent limitations applying at the end-of-pipe at the point of discharge.[2005 SOB]

The Department conducted a Use Attainability Analysis (UAA) per ARM 17.30.615(2) to determine if the use classification of the unnamed tributary to the Dry Fork of the Marias is correct. The Department found that the unnamed tributary is a perennial stream but that it cannot support a salmonid fishery because of natural high temperatures. The Department determined that the appropriate use classification is B-3. Further, the Department found that the tributary periodically has no flow in the area of the modified location of Outfall 001. As a result, use of nearly instantaneous mixing (end-of-pipe) is appropriate.

The requested permit modification will not affect WQBELs.

**V. Final Effluent Limitations**

Effluent limitations developed in the permit issued March 15, 2006 will remain fully effective and enforceable and are unaffected by the requested permit modification.

**VI. Self-Monitoring Requirements**

Self monitoring and reporting requirements for the Conrad WWTP will remain as developed in the permit issued March 15, 2006 and are unaffected by the requested permit modification.

## **VII. Compliance Schedules**

Compliance schedules contained in the permit for the Conrad WWTP will remain as developed in the permit issued March 15, 2006 and are unaffected by the requested permit modification.

## **VIII. Information Sources**

- 1) Federal Clean Water Act (CWA), 33 U.S.C. 1251, *et seq.*
- 2) Montana Water Quality Act, Montana Code Annotated 75-5-101, *et seq.*
- 3) Permit Application, Degradation Authorization, and Annual Fees, Administrative Rules of Montana (ARM) 17.30.201
- 4) Mixing Zones in Surface and Ground Water, ARM 17.30.5, *et seq.*
- 5) Montana Surface Water Quality Standards and Procedures, ARM 17.30.6, *et seq.*
- 6) Nondegradation of Water Quality, ARM 17.30.7, *et seq.*
- 7) Montana Pollutant Discharge Elimination System (MPDES), ARM 17.30.12-13, *et seq.*
- 8) Department of Environmental Quality Circular DEQ-7, Montana Numeric Water Quality Standards, February 2008
- 9) US Code of Federal Regulations, 40 CFR Parts 122-125, 130-133, & 136
- 10) MPDES Permit Number MT-0020079, Issued on March 15, 2006
- 11) Department of Environmental Quality, Use Attainability Analysis For an Unnamed Tributary to the Dry Fork of the Marias, Pondera County, Montana, March 28, 2008 [DEQ UAA]
- 12) Department of Environmental Quality, Statement of Basis, MPDES Number MT-0020079, June 13, 2005 [2005 SOB]

Prepared by: James F. Brown, January, 2009